

**United States Environmental Protection Agency (U.S. EPA)
Science Advisory Board (SAB) Quality Review Teleconference
May 17, 2011**

Summary Minutes

Date and Time May 17, 2011, 12:00 noon - 4:00 p.m. Eastern Time

Location: By teleconference

Purpose: To conduct a quality review of a draft SAB report, *Review of EPA's draft Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Southern Inland Flowing Waters*¹

Attendance:

SAB Members:

Dr. Deborah Swackhamer, Chair
Dr. Terry Daniel
Dr. Costel Denson
Dr. Otto C. Doering, III
Dr. David Dzombak
Dr. Bernd Kahn
Dr. Nancy Kim
Dr. Kai Lee
Dr. Cecil Lue-Hing
Dr. Lee D. McMullen
Dr. Judith Meyer
Dr. James R. Mihelcic
Dr. Horace Moo-Young
Dr. Duncan Patten

Dr. Amanda Rodewald
Dr. James Sanders
Dr. Kathleen Segerson
Dr. John Vena
Dr. Thomas Zoeller

SAB Staff :

Thomas Armitage, Designated Federal Officer (DFO)

EPA Representatives (individuals who requested access to the teleconference):

Elizabeth Behl, EPA Office of Water
Valerie Blank, EPA Office of Research and Development
James Carleton, EPA Office of Water
Tiffany Crawford, EPA Office of Water
Galen Kaufman, EPA Office of Water
Jacques Oliver, EPA Office of Water
Stephanie Santell, EPA Office of Water

Dana Thomas, EPA Office of Water
Steve Whitlock, EPA Office of Water

Public (individuals who requested access to the teleconference):

Frederick L. Aschauer, Rose, Sundstrom & Bentley, LLP
Joann M. Aylor, Lake Worth Drainage District
Winston K. Borkowski, Hopping Green & Sams
Kevin Carter, South Florida Water Management District
Thomas DeBusk, DB Environmental, Inc.
Bruce DeGrove, DeGrove Consulting and Training
Laura Dickson, Arnold and Porter
Donna Fries, Miami-Dade Water & Sewer Department
John J. Fumero, Rose, Sundstrom & Bentley, LLP
Erin Griffith, de la Parte & Gilbert, P.A.
Kevin Grace, DB Environmental, Inc.
Janet K. Hearn, Applied Technology and Management
D. Hultgren
Tony Janicki, Janicki Environmental
Daryll Joyner, Florida Department of Environmental Protection
Matt Kastner, The Fertilizer Institute
Michael Kliner, State Affairs Committee, Florida House of Representatives
Stanley M. Kroh, Tampa Electric Company
Jay Leverone, Sarasota Bay Estuary Program
Kristin Melton, de la Parte & Gilbert, P.A.
Thomas Miller, Palm Beach Water Utilities Department
Thomas F. Mullin, Rose, Sundstrom & Bentley, LLP
Phillip S. Parsons
Bronwyn Revell, Rose, Sundstrom & Bentley, LLP
Robert Sackellares
Andrew Thuman, HydroQual
Bernice Torres, Rose, Sundstrom & Bentley, LLP
Ken Todd, Palm Beach Water Utilities Department
Lisa M. Wilson-Davis, City of Boca Raton
Mark Wyzalek, Macon Water Authority

Teleconference Summary:

Convene the meeting

Dr. Thomas Armitage, SAB DFO, convened the teleconference. He identified Board members who were on the call. He stated that the EPA Science Advisory Board (SAB) is a chartered federal advisory committee and he reviewed Federal Advisory Committee Act (FACA) requirements. He stated that summary minutes of the teleconference would be prepared and certified by the Chair. He noted that the teleconference materials were available on the SAB Web site (these materials included: the Federal Register notice announcing the teleconference²,

teleconference agenda³, written public comments⁴, and SAB members' preliminary quality review comments⁵). He noted the Board members' compliance with ethics requirements. He indicated that two requests had been received from the public to provide oral comments and that time had been provided on the agenda to hear those comments.

Purpose of meeting and review of the agenda

Dr. Deborah Swackhamer, the SAB Chair, welcomed SAB members and reviewed the purpose of the teleconference and the agenda. She stated that on the call the chartered SAB would conduct a quality review of the draft report of the SAB Nutrient Criteria Review Panel. The title of the report to be reviewed was, *Review of EPA's draft Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Southern Inland Flowing Waters*. Dr. Swackhamer indicated that the Board would hear an overview of the draft report from Dr. Judith Meyer, Chair of the Panel, and then hear remarks from Ms. Elizabeth Behl, Director of the Health and Ecological Criteria Division in EPA's Office of Water. Dr. Swackhamer stated that the Board would then hear public comments from two individuals, hear comments from the lead SAB reviewers, discuss the report, and determine its disposition. She reminded SAB members that quality reviews focused on four questions:

1. Were the original charge questions to SAB Standing or Ad Hoc Committees adequately addressed?
2. Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the Committee's report?
3. Is the Committee's report clear and logical?
4. Are the conclusions drawn or recommendations provided supported by the body of the Committee's report?

Overview of the SAB Nutrient Criteria Review Panel's Draft Report

Dr. Judith Meyer, Chair of the SAB Nutrient Criteria Review Panel, provided an overview of the Panel's draft report. She indicated that the Panel had been asked to review EPA's proposed approaches for deriving nutrient criteria for Florida's estuaries, coastal waters, and southern inland flowing waters. She commended the SAB Staff Office for its work to form the Nutrient Criteria Review Panel. She stated that the Panel had responded to six charge questions. She noted that there was some redundancy in the Panel's report as a result of overlap in the charge question topics.

She reviewed the Panel's charge. She noted that it included questions about: the conceptual model used to select assessment endpoints, data sources, and possible approaches to define criteria for categories of waters. She stated that the Panel was pleased that EPA was developing criteria for nitrogen and phosphorus. She noted that the Panel had expressed concern about how the driver variables, total nitrogen and total phosphorus, would be linked to measureable biological endpoints. She indicated that the Panel had recommended that EPA provide more detail on application of proposed approaches for relating nutrient levels to balanced natural populations. Dr. Meyer highlighted some of the Panel's broad conclusions. She noted that: for estuaries, the Panel thought EPA should adopt additional measures of

seagrass health beyond the proposed use of chlorophyll-a; the Panel was concerned that for coastal waters no direct measurements of nutrients were proposed to verify the relationship between pollutant loads and observed chlorophyll-a; the Panel also was concerned about the use of nutrient criteria in man-made and managed canals but thought that these waters should be managed to ensure downstream estuarine designated uses. Dr. Meyer also noted that the Panel had some concerns about the distribution of nutrient loads for calculation of downstream protective values. In addition, Dr. Meyer remarked that the Panel had commended EPA for adopting a dual nutrient approach.

Dr. Swackhamer thanked Dr. Meyer for her overview and called upon EPA for remarks.

EPA Remarks

Ms. Elizabeth Behl, Director of EPA's Health and Ecological Criteria Division, thanked the Panel for its report. She indicated that EPA was working to ensure that nutrient criteria were based on sound science and noted that the Panel's report would be very helpful. She also mentioned the importance of man-made canals in South Florida and the timeframe for developing nutrient quality criteria. Dr. Swackhamer thanked Ms. Behl for her remarks and next called for public comments.

Public Comments

Dr. Swackhamer asked Thomas DeBusk of DB Environmental to provide public comments. Mr. DeBusk summarized written comments provided on behalf of the Everglades Agricultural Area Environmental District. He indicated that the SAB Nutrient Criteria Review Panel had provided useful recommendations in its report. He noted that man-made, highly managed canals comprise about 90% of South Florida inland flowing waters. Mr. DeBusk commented that use of EPA's proposed assessment endpoints and reference stressor response approaches could not be supported in these waters. He indicated that these highly altered systems must be separated from natural free-flowing streams.

Dr. Swackhamer next asked Kevin Carter of the South Florida Water Management District to provide oral comments. Mr. Carter commented that the Panel had provided a useful report and he offered several suggestions to improve the document. He noted that the Panel had commented on the schedule for completing nutrient quality criteria. He commented that in the report the Panel should further discuss how the schedule for developing nutrient criteria could affect the criteria. He also commented that in the report the Panel should indicate how much time and effort would be needed to develop nutrient criteria for canals. In addition, he commented that it would be helpful for the Panel to provide further information on how to define a balanced population.

Chartered SAB Discussion of the draft Report

Dr. Swackhamer stated that three lead SAB lead reviewers (Drs. Ingrid Burke, Duncan Patten, and Amanda Rodewald) had been assigned for the quality review. She asked them to summarize their comments on the report. Dr. Swackhamer noted that all of the lead reviewers

had submitted written comments; however, Dr. Ingrid Burke was not able to be on the call. Dr. Swackhamer stated that she would summarize Dr. Burke's comments.

Dr. Amanda Rodewald highlighted her written comments. She commented that the Panel had conducted a thorough review of EPA's document. She commented that the Panel had provided a large number of recommendations in the report and thus it would be helpful to prioritize the recommendations. She commented that the Panel's report should draw a distinction between the meaning of "driver variable" and "causal variable." Dr. Rodewald indicated that the Panel should clarify its position on the use of chlorophyll-a as an endpoint. In addition, Dr. Rodewald noted that the previous SAB report on the stressor-response approach appeared to be more negative with regard to the appropriateness of the approach for criteria derivation. She commented that the Panel's recommendations should be consistent with findings of the previous SAB report. In addition, Dr. Rodewald agreed with the public comments indicating that it would be useful to provide information on the time and resources needed to develop metrics for canal systems.

Dr. Duncan Patten highlighted his written comments. He indicated that the Panel had produced a well-written, comprehensive report. He stated that the Panel's charge questions were complex, and that the report provided literature citations to support the findings and recommendations. Because the Panel had advised proceeding with caution, Dr. Patten recommended that any future EPA guidance for deriving numeric nutrient criteria be reviewed again by an external panel. He observed that there was some repetition in the Panel's report because the charge questions were repetitive but he did not think this necessitated any editorial changes. He stated that the letter to the Administrator needed strengthening to emphasize the Panel's most important recommendations. In addition, Dr. Patten indicated that the flaws in EPA's conceptual diagram should be discussed in more detail in the report.

Dr. Swackhamer summarized written comments provided by Dr. Ingrid Burke. Dr. Swackhamer noted that Dr. Burke had commented that the executive summary was quite long and could be edited to make it shorter. Dr. Burke had also commented that the Panel provided many considerations and recommendations. Dr. Burke had suggested that it would be helpful to number the recommendations and clarify whether statements in the report were recommendations, suggestions, or comments for consideration. Dr. Burke had further commented that a priority designation such as "very important" or "important" could be included with recommendations. In addition, Dr. Burke had also commented that the terms "healthy" and "balanced" populations were subjective, and that the Panel might consider recommending that these terms be removed from EPA's document rather than defined.

Dr. Meyer responded to the SAB lead reviewers' comments. She indicated that it might be possible to provide a clearer indication of the relative importance of some of the Panel's recommendations. She acknowledged that a previous SAB report had indicated that the stressor-response approach should be used with caution. However, the Panel supported use of this approach in Florida because supporting data were available, and also because in Florida it was appropriate to consider pathways driven by autotrophic pathways. Dr. Swackhamer asked Dr. Meyer to clarify this in the Panel's report.

In response to Dr. Patten, Dr. Meyer indicated that she did not think there would be time to review another EPA document, but she noted that the nutrient criteria could be reevaluated in the future. She noted the panel had been informed by EPA that the terms “balanced” and “healthy” populations could not be removed from the document. Dr. Swackhamer asked EPA staff how these terms would be defined. Ms. Behl indicated that the Agency was working to interpret these terms used in the narrative criteria. Dr. Meyer noted that defining these terms would require local insight and that this was beyond the scope of the Panel’s work.

Dr. Meyer addressed the Panel’s broad conclusion that nutrient criteria based on instream protection values were not meaningful for man-made and managed canals. A Board member commented that as EPA moved toward green infrastructure, it was important to consider how canals should be managed. Dr. Meyer commented that the canals did provide ecosystem services and supported aquatic systems but the Panel was not convinced that these ecosystem services were linked to nutrients. Another member suggested that the report could acknowledge the importance of managing canals to provide ecosystem services. In response, Dr. Meyer indicated that the report could acknowledge that there are different canal types and that, although nutrient criteria were not appropriate for managing these systems, habitat and hydrology were important and canals should be managed to ensure that downstream designated uses are met.

A Board member commented that most canals were designed for flood control, not to provide littoral habitat. He noted, however, that proper maintenance of the canals was important. Dr. Meyer responded that she thought the importance of canals in providing ecosystem services should be mentioned in the report and it should be made clear that habitat and hydrology were important in this regard.

Dr. Swackhamer then asked other chartered SAB members for comments. A member commented that in the letter to the Administrator a nutrient trading approach had been suggested but this was not discussed in the body of the report. Dr. Meyer responded that the Panel was concerned about how loads were allocated among tributaries. She noted that the recommendation calling for a nutrient trading approach might not be the best way to address this. A Board member suggested that the Panel might reword the recommendation to highlight the importance of upstream allocation. She noted that different allocations could lead to different costs. Dr. Swackhamer suggested that the recommendation could be reworded to call for a “flexible allocation” scheme rather than nutrient trading.

The Board discussed the statement in the letter to the Administrator indicating that EPA not sacrifice quality work for the sake of the schedule. An SAB member commented that a time constraint existed and this would influence the quality of what could be done. She indicated that EPA might not be able to establish the standards they would like within the time frame of the court-ordered consensus decree. She noted that it might be necessary to do additional work later. Dr. Meyer responded that much of the EPA report dealt with water quality models and the Panel had considered whether the models could provide needed information. Another member noted that modelers had been pushed to complete work to build separate models for each estuary. Another member noted that expansion of metrics might take additional time. A member commented that a policy decision had been made to move forward with nutrient criteria within a given time frame. He indicated that the report language expressing concern that EPA not

sacrifice quality of work for the sake of a schedule should be revised. He suggested that the report indicate that tradeoffs between the schedule and the priority science issues should be considered.

A member commented that the report contained some negative statements concerning models developed for Chesapeake Bay. He noted the importance of the Chesapeake Bay effort and commented that this work had provided a great amount of nutrient and sediment modeling knowledge. He suggested removing the negative statements concerning the Chesapeake Bay models.

Dr. Swackhamer noted that in written comments a member had questioned a particular statement in the report. The report stated that EPA had determined that numeric nutrient criteria were needed. The member questioned whether this statement conflicted with another statement indicating that the Agency committed to proposing nutrient criteria under a court ordered consent degree. Dr. Meyer responded that the statement in the report was correct, EPA had decided that numeric nutrient criteria were needed. EPA staff indicated that in 2009 EPA had determined that numeric nutrient criteria were needed. A lawsuit was settled to establish numeric nutrient criteria by dates indicated in the report.

Dr. Swackhamer asked whether members had any additional comments. There were no further comments so Dr. Swackhamer asked for a motion on disposal of the report. She noted that the Board's quality review could result in: 1) approval of the report either as is or subject to editorial changes and review by the Chair, 2) approval of the report subject to re-review by designated Board members, or 3) return of the draft report to the authoring panel or committee for further work so that a revised report may be brought before the Board for a second quality review. A member moved that the report be approved subject to the changes discussed and review by the Chair of the SAB. The motion was seconded. The Chair asked for a voice vote to approve the motion and the motion carried.

Dr. Swackhamer then thanked Dr. Meyer and members of the SAB Panel for their work. The Designated Federal Office then adjourned the meeting.

Respectfully Submitted:

/Signed/

Dr. Thomas Armitage
SAB DFO

Certified as Accurate:

/Signed/

Dr. Deborah L. Swackhamer
SAB Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.

The following meeting materials are available on the SAB Web site,
<http://www.epa.gov/sab>, at the following address:

<http://yosemite.epa.gov/sab/sabproduct.nsf/MeetingCal/DE9C6B6E664212E4852578690047D9A5?OpenDocument>

¹ Draft SAB Panel report, *Review of EPA's draft Approaches for Deriving Numeric Nutrient Criteria for Florida's Estuaries, Coastal Waters, and Southern Inland flowing Waters*

² Federal Register Notice Announcing the Meeting

³ Agenda

⁴ Written Public Comments from:

Thomas A. DeBusk, DB Environmental

⁵ Preliminary Quality Review Comments from Members of the Chartered SAB